IMPLEMENTATION OF GUIDELINES FOR THE ACTIVATION OF EFFECTIVE ANTIBIOTICS' STEWARDSHIP TEAM IN GREEK HOSPITALS – THE ROLE OF HOSPITAL PHARMACIST

Markogiannakis A.[1], Pegkas G.[1], Allagianni C.[2], Efstathiou S.[3], Makridaki D.[2,4]

1. Laiko General Hospital, Athens, Greece
2. Sismanoglio-Amalia Fleming General Hospital , Marousi, Greece
3. Thriasio General Hospital, Elefsina, Greece
4. National Organization for Medicines, Cholargos, Greece

What was done?

We have described the sequential steps for the establishment of multidisciplinary Antibiotic Stewardship Team (AST) in Greek hospitals and prepared training material to increase involvement of hospital pharmacists.

Why was it done?

The term of AST has been introduced in Greek legislation since 2014 and should become the driving force to optimize antimicrobial therapy, especially for the protected antibiotics (PAs): carbapenems, colistin and tigecycline. Southern Europe has higher levels of antimicrobial resistance and unfortunately Greece ranks first in Europe in the consumption of the mentioned PAs in hospitals, consequently the activation of AST constitutes a national priority. The existing Greek legal framework defines that AST consists of four key member physicians (experienced in infectious diseases) plus the hospital pharmacist as coordinator of the group (the composition of the AST is shown in Figure 1). As the number of serving pharmacists in Greece remains critically low, very few hospitals have actually activated the AST. The Panhellenic Association of Hospital Pharmacists (P.E.F.N.I.) decided to organize regional meetings to enhance the involvement of pharmacists by sharing the practice of experienced colleagues running antibiotic stewardship programs (ASP) in their hospitals.

How was it done?

We combined the strategies and procedures implemented in three hospitals (with defined teams for stewardship procedures at least for one semester), in a flowchart presenting the establishment, activation and feedback of the AST (Figure 2, 3). We have developed an ASP for hospitals, with initial target to minimize the use of predetermined PAs based on each hospital's antibiotic resistance surveillance data. Functional options in each step have been described, making it flexible for the colleagues to selectively implement them in their hospitals. We also created specific educational material to use in regional meetings that P.E.F.N.I. organized in collaboration with relevant scientific societies (Greek Society for Infection Control and Hellenic Society for Chemotherapy). The material consisted of a set of hand-outs and presentations, regarding explanation and analysis of ASP procedures, the importance of hospital administration support, training on specific computational tool to measure antibiotic consumption in Defined Daily Doses (DDDs)/100 patient-days, discussion on case-studies and sharing of knowledge from EAHP Academy Antibiotic Stewardship Seminar 2017.

What has been achieved?

Two large scale seminars (the first addressed to hospital pharmacists of metropolitan area of Athens and Piraeus and the second those of Northern Greece) and   several regional meetings have been organized, as an attempt of P.E.F.N.I. to increase the engagement of colleagues in ASPs. Through these educational initiatives, P.E.F.N.I., in combined effort with the Ministry of Health and responsible authorities, promotes:

✓Increased involvement of hospital pharmacists
✓Reliable reporting of controlled use for PAs
✓Safer antimicrobial management practice
✓Economy on restricted pharmacotherapy budgets
✓Acknowledgement of the critical role of pharmacists by other healthcare professionals.

What next?

✓The basic flowchart can be broadened to include subsequent stewardship activities such as recording proper surveillance of more classes of antibiotics, assessment of   antimicrobial surgical prophylaxis and/or antifungal pharmacotherapy.
✓Connection of local ASP reports and DDDs/100 patient-days consumption data to a national network for hospitals will help towards the creation of a real-time automated database in Greece.
✓Central assessment of ASPs established in Greek hospitals must be performed using specific indices such as microbial resistance, cost savings and reduction of incidence of hospital infections.

FIGURE 1: ANTIBIOTIC STEWARDSHIP TEAM

HOSPITAL PHARMACIST (COORDINATOR OF THE TEAM)

INFECTIOUS DESEASES (ID) SPECIALIST OR PHYCISIAN WITH EXPERIENCE IN ID

ANTIMICROBIAL STEWARDSHIP TEAM (AST) FOR THE SURVEILLANCE OF CONSUMPTION AND RATIONAL USE OF ANTIBIOTICS

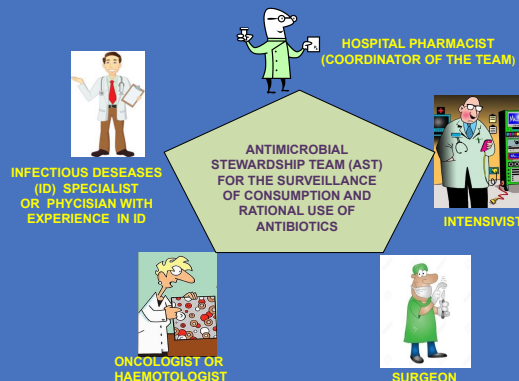INTENSIVIST

ONCOLOGIST OR HAEMOTOLOGIST

SURGEON

FIGURE 2. FLOW DIAGRAM OF THE PROCEDURE CONCERNING ACTIVATION AND OPERATION OF ANTIMICROBIAL STEWARDSHIP TEAM (AST) FOR THE SURVEILLANCE OF CONSUMPTION AND RATIONAL USE OF ANTIBIOTICS

1
- AST is established after request of the President of Infection Control Committee or the Hospital Pharmacy Director to Hospital 's Administration
- AST consists of 5 members with the Hospital Pharmacist as coordinator, in line with national legislation (see Figure 1)

2
- The coordinator invites the members of the team for the 1st meeting, in order to determine a) the antibiotics that AST will protect from overprescription and misuse taking into account the local levels of antimicrobial resistance and b) liaison physicians for each clinic of the hospital.

3
- Daily or very frequent prescription surveillance of PAs by sending electronically to each liaison physician informative templates with essential patients' data (name, clinic, date of admission and initiation date of PA's prescription).

4
- Collection of consumption data from pharmacy software program and expression to DDDs/ 100 patient-days (separate data analysis for each clinic)

5
- Evaluation of the surveillance program with frequent meetings of AST members and liaison physicians. Regular meetings in common with the Infection Control Committee are strongly suggested).

6
- Extension of implementation of the ASP in other classes of antibiotics, high cost antifungal drugs, and screening of surgical prophylaxis.
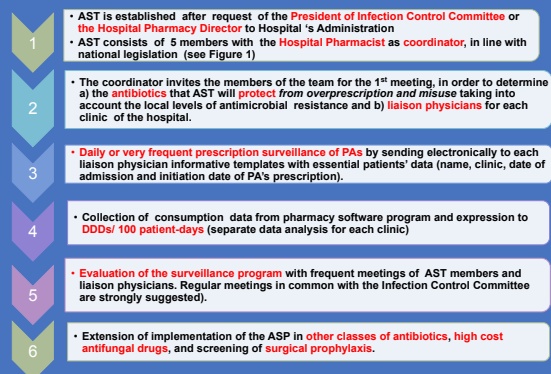
FIGURE 3: FLOW DIAGRAM OF THE PROCESS OF THE ANTIBIOTIC STEWARDSHIP PROGRAM

Prescription of the PAs from the clinic using hospital's software program

Written instructions to the patient's flow by the responsible physician for administering the PA.

Sending to all liaison physicians by e-mail a template with essential patients' data (name, clinic, date of admission and initiation date of PA's prescription)

Hospital Pharmacist

ID specialist

The ID specialist visits the patients of the clinic on the same day, checking if PA prescription is appropriate.

Change instructions in order to administer another antibiotic to the patient.

Waiting for approval of the PA.

Approval for administering the PA by liaison physician's stamp on restricted antibiotics specific form or in the patient's flow.

Communication between the clinic and the pharmacist concerning the result of approval process or submission of restricted antibiotics specific form to hospital pharmacy.

PA administration

Non-administration or interruption of administration of the PA.